

Abstract of the Disclosure

A CDMA wireless communication system for communicating with wireless terminals. The system comprises a channel estimator for determining characteristics of the wireless channels of the wireless terminals. The channel characteristics are used by a code optimizer to assign spreading codes to the wireless terminals. In one embodiment, the code optimizer utilizes an iterative code optimization algorithm and maintains a processing set of wireless terminals. The code optimizer chooses target wireless terminals and performs a random code search in order to find an improved code for the target wireless terminal. The improved code found in the random code search is further improved by performing a gradient search of codes in the signal space in the vicinity of the improved code and by performing a gradient search of transmission delays. The improved codes are transmitted to the wireless terminals for use in reverse link communication.